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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,770	03/30/2004	Kazuhiko Matsumoto	36609	4956
116 7590 07/02/2007 PEARNE & GORDON LLP 1801 EAST 9TH STREET SUITE 1200 CLEVELAND, OH 44114-3108			EXAMINER HAJNIK, DANIEL F	
			ART UNIT 2628	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/812,770

Applicant(s)

MATSUMOTO, KAZUHIKO

Examiner

Daniel F. Hajnik

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-4 and 6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-4 and 6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 2-4, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wolff et al. (US Patent 6067545, herein referred to as "Wolff") in view of Iyriboz et al. (US Patent 6369812, herein referred to as "Iyriboz").

With regard to claim 2, Wolff teaches the claimed:

A multisystematic volume rendering image processing system comprising:

a plurality of image data server computers (*col 4, line 63 "servers 104A-106A"*),

a plurality of image display units (*col 4, line 63, "clients" and in figure 7A, where clients 102A and 100A have image displays*),

one or more common volume data storage units for storing volume data necessary for the image display units, (*in figure 1A where memory 118 is a common volume data storage unit*)

the image display units each including an input section and an output section transmit the image requests entered through the input sections to the image data server computers via the network (*col 1, lines 58-60, "multiple clients make I/O requests which are directed to a particular resource on the network"*), receive the image results processed by the image data

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server computers and output the image results to the output sections (*col 1, lines 58-60, "multiple clients make I/O requests ... A server on the network receives and carries out the I/O requests"*);

the server manager makes a decision to switch data processing (*col 4, lines 57-59, "A network which implements this embodiment of the invention can dynamically rebalance itself to optimize throughput"* and *col 25, lines 23-25, "Server 104A determines that on the basis ... that it is experiencing an overload condition. Server 4 then sends a redirect packet 710 to the aware client 3"*) for the plurality of image display units so that a part of the data processing performed by an operative one of the image data server computers will be replaced by data processing performed by another suspended one (*col 4, lines 53-55, "The remapping may take place in response to a redirection command emanating from an overloaded node"*) including a state of low load (*col 25, lines 64-65, "Before load rebalance CFN 4 is at 95% utilization, while CFN 3 has 0% utilization" where a low utilization is a state of low load*) of the image data server computers wherein when the server manager decides the switching, if the same volume data as the volume data handled by the operative image data server computer are not present in the suspended image data server computer as a destination of the decided switching, the server manager performs a control function wherein the volume data from the volume data storage unit is transmitted to the destination image data server computer (*col 8, lines 16-18, "Optimal remapping between the existing servers 104C-106C and the available memory resources 118A-B is accomplished by processes 106PC"*).

Wolff does not explicitly teach the remaining claim limitations.

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Iyriboz teaches the claimed:

process image data in accordance with image requests concerning angle and position issued from the image display units (*col 14, lines 39-40, "To assist the remote viewers in quickly location particular annotation, the viewer application supports an option to find or jump to a ... position or view orientation in the sequence of images"*) and transmit image results to the image display units via the network (*col 5, lines 45-49, "Over a local area network (LAN) 30, the data is selectively transferred ... to a remote viewing computer 34 where the data is decompressed and displayed on a remote display screen 36"*);

a server manager for managing data copying via a network, wherein the image data server computers receive volume data necessary for formation of images requested by the image display units from the volume data storage unit via the network (*col 14, lines 37-39, "Other remote viewers accessing the server would then be able to view the annotations associated with the images"*),

the volume data storage unit transmits the necessary volume data to the image data server computers in accordance with requests issued from the image data server computers (*col 5, lines 46-49, "The sequence is transferred to a server 26 which processes the data and makes it available for remote access"*);

additional information including scale-up factor data, angle data, and position data (*col 13, lines 48-49, "To provide movement along the viewpath, a path motion processor 394 scales or translates the displayed view"* and *col 13, lines 36-39 "viewing application 362 enable the remote viewer to rotate pitch and yaw to selectively view any portion of the spherical image about its viewpoint"*) of the image requests is copied from the operative image data server

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computer to the destination image data server computer, and the destination image data server computer is made to execute the data processing (*col 5, lines 43-47, "The sequence is transferred to a server 26 which processes the data and makes it available for remote access. Over a local area network (LAN) 30, the data is selectively transferred, based on the commands of a remote human viewer 32"*)

It would have been obvious to one of ordinary skill in the art at the time of invention to combine Wolff with Iyriboz. Wolff would benefit from the interactive controls that Iyriboz offers (*col 3, lines 44-46*) in a networked environment for images viewing.

With regard to claim 3, Wolff teaches the claimed:

The multisystematic volume rendering image processing system as claimed in claim 2, wherein the decision to switch data processing is based on an overload condition of the operative (*col 4, lines 53-55, "The remapping may take place in response to a redirection command emanating from an overloaded node"*).

With regard to claim 4, Wolff teaches the claimed:

when the volume data storage unit is requested to send volume data, the server manager inquires of the memory whether the same volume data are already sent or not, after the volume data is sent from the volume data storage unit; (*col 22, lines 6-8, "Only fields 440F-G are dynamic and if needs replication 440L is set to Boolean True, only the fields 440F-G portion of the record needs replication, e.g. to be transmitted to other nodes"*)

when the same volume data are already sent, the server manager judges whether the volume data are collected to one of the image data server computers or not; (*col 22, lines 5-9, "field 440L contains the Boolean False indicating that no replication is required. Only fields 440F-G are dynamic and if needs replication 440L"*)

Wolff does not explicitly teach the remaining claim limitations.

Iyriboz teaches the claimed:

The multisystematic volume rendering image processing system as claimed in claim 2, wherein the server manager stores identification names of the volume data (*col 6, lines 38-39, "to selectively access certain data in the volume image data memory 20" where selective access would require some type of identification means*) transmitted from the volume data storage unit and destination image data server computers in a memory in advance (*col 5, lines 45-46, "Over a local area network (LAN) 30, the data is selectively transferred ... to a remote viewing computer 34"*);

when a decision is made that the volume data are collected to one of the image data server computers, the additional information is copied to that data server computer as a destination of the decided switching (*col 5, lines 43-47, "Over a local area network (LAN) 30, the data is selectively transferred, based on the commands of a remote human viewer 32" where these commands can include additional data, i.e. the additional data can include user commands col 14, lines 39-40, "the viewer application supports an option to find or jump to a ... position or view orientation in the sequence of images"*) and that image data server computer is made to

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execute the data processing (*col 5, lines 44-45, "server 26 which processes the data and makes it available for remote access"*).

It would have been obvious to one of ordinary skill in the art to combine this teaching of Iyriboz with Wolff in order to benefit from the interactive controls that Iyriboz offers (*col 3, lines 44-46*) in a networked environment for images viewing.

With regard to claim 6, Wolff does not explicitly teach the claimed limitations.

Iyriboz teaches the claimed:

6. The multisystematic volume rendering image processing system as claimed in claim 2, wherein said additional information includes mask information (*col 14, lines 39-40, "To assist the remote viewers in quickly location particular annotation, the viewer application supports an option to find or jump to a ... position or view orientation in the sequence of images"* and *col 5, lines 45-49, "Over a local area network (LAN) 30, the data is selectively transferred ... to a remote viewing computer"* where the mask information is the position and view orientation information associated with the image request, this interpretation of mask information is consistent with applicant's specification, for example, see page 22, lines 18-20).

It would have been obvious to one of ordinary skill in the art to use this claim limitation in Wolff. The motivation of claim 1 is incorporated herein.

Response to Arguments

3. Applicant's arguments filed 4/13/2007 have been fully considered but they are not persuasive.

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Applicant argues no additional information is copied from the remote computer to the destination image data server computer (top of page 6 in filed response).

The examiner respectfully maintains that the rejections are proper because the rejection is based upon the combination of incorporating features of Iyriboz into Wolff and does not rely on the system of Iyriboz alone. For example, the combined system can teach the claimed limitations in the following way: Using the client load rebalancing and server remapping of Wolff (col 4, lines 50-55) as a base system and incorporating the additional features of Iyriboz. Iyriboz has for example one additional feature to add to Wolff (*col 14, lines 39-40, "To assist the remote viewers in quickly location particular annotation, the viewer application supports an option to find or jump to a ... position or view orientation in the sequence of images"*). In this instance, the position and view orientation that control the view application can be incorporated into the server remapping system of Wolff. Through this combination, this additional information (position and view orientation control) can also be stored on a given server in the system of Wolff. If this additional information is added to Wolff, this additional information can also be copied with the system of Wolff when a remapping operation occurs. For example, Wolff states (*col 4, lines 57-60, "A network ... can dynamically rebalance itself to optimize throughput by migrating client I/O request from over utilized pathways to underutilized pathways"*). In this combination, the additional information can be part of the client I/O request. Wolff in figure 7A, shows one server "Node 4" which has too many I/O client requests. In figure 7B, the switching occurs where a given client I/O request can be copied from "Node 4" to "Node 3". If the client I/O request contains the position and view orientation control information (additional information) of Iyriboz, then this information will be copied in the switching process as well.

Applicant argues the server merely passes and compresses the sequence data and argues the server is unnecessary and can be completely omitted (top of page 7 in filed response).

The examiner respectfully maintains that the rejections are proper because the argument as explained above applies to this argument as well. For example, the office action does not solely rely on the server system of Iyriboz but rather utilizes the system of a Wolff as a primary reference in the 35 USC 103(a) rejections. Wolff states (*col 4, lines 65-67*,

"Servers/nodes/clustered filesystem nodes (CFNs) 104A-106A are connected to the storage resource through a private network 112"). In the given diagram in figure 1A, the servers 104A and 106A are an important link in the system because the servers provide a connection means between clients 100A and 102A and the cluster nodes 118. Thus, in contrast to the system of Iyriboz, these servers appear to be a necessary part of the system. Further, these servers can in addition perform switching (or remapping) operations that can remap client I/O requests (*col 4, lines 53-60*). Lastly, when the additional information of Iyriboz is added to Wolff, then the servers can actually copy the additional information with the client I/O requests when the switching process in Wolff occurs.

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel F. Hajnik whose telephone number is (571) 272-7642. The examiner can normally be reached on Mon-Fri (8:30A-5:00P).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ulka J. Chauhan can be reached on (571) 272-7782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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